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AUTHOR Bess, James L.
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ABSTRACT

This report summarizes the finding from the evaluation of the Entering Freshmen Topology program and lays out the parameters of a new system for the collection of data at William Patterson College. The profile includes student and faculty responses concerning styles, decisions and background information. While the notion is not new that student data can be used for educational and management purposes, such use has not been systematic. In the program to design a comprehensive system, a gross task analysis identified six related aspects of the learning environment which the instructor can manipulate to fit the learning styles and needs of students. Faculty and staff training is suggested for full utilization of data to facilitate decision making. Also included is an index of testing instruments available which are most relevant to this project. (BN)

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A REPORT TO WILLIAM PATERSON COLLEGE:

The Entering Freshmen Topology: Guidelines for the Design of a Student Data Collection System and Its Use in Teaching and Administration

Consultant: Professor James L. Bess, Ph.D.
Teachers College, Columbia University

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

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Introduction

In the spring of 1977, Dr. Clifford Adelman, Associate Dean and Director of Academic Project Development, asked me to assist in the evaluation of the Entering Freshman Topology program in terms of its effectiveness in providing useful information about students at William Paterson College. I was also asked to design an information gathering system for the College which would permit the faculty and administration to use student data for longitudinal comparisons for each entering student cohort and across cohorts entering in different years and perhaps at different institutions. The system was to include a rationale for the collection of various kinds of information from students and a specification of the kinds of instruments which might be used.

This report summarizes the findings from the evaluation of the EFT program and lays out the parameters of a new system for the collection of data. It should be noted at the outset that because of the transitional state of the College, the profile of students drawn from EFT faculty and from other data on hand must be viewed with caution. The data represent information about students entering in the year 1976. When the State of New Jersey changed its mandate to the College in 1977, reducing the number of entering students to be admitted, admissions standards -- almost exclusively SAT cut-off scores -- were dramatically increased. Thus, the profile drawn herein may not correspond to the character of the classes likely to be admitted in future years. The drawing of the profile is helpful, nevertheless, in calling attention to the kinds of data needed but not presently available.

It should be noted that this project has a somewhat larger focus than simply a report on students and a plan to gather information about

them in the future. In the past at WPC -- indeed, in many colleges today -- admissions policy was developed for the purpose of selecting those students who have the maximum likelihood of taking advantage of a college whose mission and personnel have been independently determined. For example, in most private colleges, admissions persons try to find high school seniors who will be most likely to succeed at the college and in post-graduate years. The faculty who are recruited to these colleges are screened to assure that their orientations and values conform with those of the college in terms of the objectives of undergraduate education. The college then comes to have a reputation which is perpetuated over long periods of time by the faculty.

With the advent of mass higher education, a new clientele has demanded access to college. Typically, these new kinds of students have parents who did not attend college. For financial and other reasons they also tend to apply to colleges which are geographically proximate. They do not, in other words, either have the opportunity or wish to avail themselves of the opportunity to select from among many colleges with different images and with different educational objectives. More plainly, they are "stuck" with the limited variety of local colleges. The burden of proof of the educational validity of college offerings is thus no longer on admissions offices to find the "right" students -- those who will best succeed in a <u>given</u> college environment (though of course selectivity within the more homogeneous applicants is still necessary and desirable to effect the best fit). It is on the colleges themselves, particularly the state colleges, to determine what kinds of curriculum, extra-curriculum, pedagogy and "climate" are most appropriate to their

expected clientele. The corollary is also true -- it is necessary that existing faculty skills in addressing the needs of these new students be upgraded and that the image and mission of the college be clear so that recruitment of new faculty can proceed accordingly. In other words, state colleges need to consider (and reconsider frequently) the ways in which they are serving their given student constituencies. It is this thought which guided the design of a student data management information system for William Paterson College.

Plan of the Report

The Report is in three parts. The first is a profile of the students entering William Paterson College drawn from available data. The second is the delineation of the plan for future data collection. This is supplemented by an appendix with references to the instrumentation suggested in the Report. The last section outlines a program for implementation of the system, including a plan for the training of faculty and administrators in the use of the system.

Part I - The Entering Student Profile

Frequently, because of the decentralized nature of college and university administration, the amount and nature of information available about students is not known. Nor are the data collected centrally for overall analysis. At the outset of this project, I asked Dr. Adelman whether it would be possible to do an "inventory" of existing data collection efforts and to pull together whatever summaries of those data were available. He was good enough to do so, and the findings in this Report are thus drawn from the following sources:

1976 Student Information Form, Cooperative Institutional Research Program
EFT Questionnaire (adapted from Jeff Coons)
EFT Faculty Meeting Minutes
Media Use Questionnaire
FIPSE Proposal

What follows is an interpretive summary of data from these sources. I have deliberately made rather broad interpretations of the data -- stretching the meanings somewhat. There are two reasons for this. First, an analysis by someone outside of the College can, and usually is, different from one which is performed by a person or persons immersed in the data and the activities of the College. My outsider perspective permits me to see the data in a different light. In some cases, because I am not close to the situation, I may have overdrawn an inference, but I prefer to risk erring on the side of over-interpretation, leaving to those on campus the modification of that view. The second reason for free or loose interpretation comes out of necessity. There are insufficient data to form valid inferences. Indeed, one of the purposes of the project is to recommend new data sources. It will become evident that gaps in the above student data require a looser interpretation than I hope will be the case when a new system is in place.

In describing the entering class of 1976, several cautions must be entered at the outset. First, there is some reason to believe that the samples from which the data were collected are not representative of the class as a whole. For example, only 760 students (59%) completed the CIRP form, though the freshman class is considerably larger than this at 1300. Most of the part-time students are among the non-respondents. We do not know the direction of the bias in the present data. Typically, fewer minorities, fewer marginal applicants (later admittees, undecideds, etc.),

and those with greater liberal-left leanings tend not to fill out questionnaires. On the other hand, part-time students, usually from lower socio-economic classes, tend to be more conservative. Hence, the analysis must be guarded on these counts. Furthermore, the selection criteria for EFT participants apparently excluded students commuting from more distant places. As a result, both the responses to the EFT questionnaire and the perceptions of faculty in the EFT program will necessarily be biased. It is likely that those who make the commitment to commute from greater distances are different in a number of ways -- e.g., they are probably more autonomous than others. Again, interpretation of the data must proceed cautiously because of the potential bias. Finally, I should add a word about the style of this profile: I intentionally refrain from presenting long lists of figures in tabular form. I assume that the readers of this report have access to the raw data themselves, particularly the CIRP printouts and are reasonably familiar with them -- or can be. What I have done is to highlight important features of the data, calling attention to aspects which may bear on curricular, pedagogical or other educational policy. A last caution concerns the ACE national norms: when comparing WPC freshmen with "4-year colleges" across the country, the enormous differences among the latter group must be recognized. WPC is state-supported, Eastern, with about 8-9000 students, almost all local. Included in the norms are such diverse kinds of colleges as private, small sectarian schools and very large, residential, public colleges which are less than ten years old. As will be seen in the Recommendations section below, I have some doubts about the suitability of the CIRP Form for WPC use, unless better comparative data are obtained.

WPC Freshmen

The vast majority of freshmen come directly to WPC from high school at the age of 18 or 19, a pattern fairly typical of college-going around the country. As many as six percent of the male freshmen, however, interrupted their studies before entering college. If this proportion obtained for previous years, these students may represent either a special group of undergraduates to which attention must be paid or an unusual resource in an undergraduate population (which may tend to conform to more traditional prescribed patterns of behavior).

The freshman class is predominantly Caucasian (91.9%). The percentage of Black/Negro/Afro-American students attending (4.9%) does not match the percentage of college-age young people in the region who might attend college and is less than half of the national average (11.3%). These data raise questions about the relationships between the College's local community obligations and the desirable mix of students from more distant locations.

Because almost all of the students (93%) come from homes less than fifty miles from the campus, family backgrounds and characteristics tend to reflect the patterns in the local communities. Average family income is approximately $18,000. About 18% of the families take in less than $10,000 annually, 27% earn from $10-15,000, another 37% from $15-25,000, 12% report $25-35,000, while about 5% have incomes in excess of $35,000. Though research has shown that student reports of parental income are not accurate, especially for incomes above $25,000, we can assume that the bias is random and that the distribution is reasonably correct. These data reflect a somewhat less affluent student population than is indicated

nationally. Again, it should be noted that these data do not include figures on most of the part-time students at WPC who may be expected to come from lower income families, since the part-timers are usually working. Hence, it is likely that the average income is lower than $18,000.

Student responses to the questionnaire indicated that their religious preference differed insignificantly from that of their parents. Almost two-thirds of the mothers and fathers of the students were Roman Catholic, and almost three-fifths of the students were Roman Catholic. The parents of entering freshmen at WPC are less well educated than parents in the ACE norms, with 38.4% of the fathers of students at Paterson having some college experience, if not an undergraduate and/or graduate degree. This compares with 51.7% across the country. Interestingly, the main difference seems to be in the percentage of fathers with graduate degrees (6.6% vs 15.4%). A similar disparity between the College and national norms exists for mothers of entering freshmen. It seems clear from these data that for almost two-thirds of the families of freshmen, the student entering college is probably the first generation to be exposed directly to a college education.

Forty-three percent of the mothers of entering freshmen are either homemakers (33%) or unemployed, about the same as national averages. A little over a third of the fathers are businessmen (35%), somewhat more than the norm (30%); 13% are skilled workers, again a bit more than the norm (10%). No men in the new class have fathers who are doctors or dentists, a surprising figure when compared with the national norm of 3%. Fathers who are in other professional fields are also underrepresented

among the parents of students at WPC. For example, the WPC percentage of fathers employed in education fields is less than half of the national norm (2.6% vs 5.4%). In law, the figures are .5% for WPC and 1.6% elsewhere. The absence of professional models at home accounts in part for the distribution of expected occupations among the students. One indication is that the percentages of students at WPC indicating plans to pursue medical or law degrees are about one quarter and one half the national averages respectively. The implication here is that there may be some need in the curriculum for introducing the professions to the students in ways which enable them to modify their occupational self-concepts to include professional roles.

William Paterson College SAT cut-off scores are comparable to those of Fairleigh Dickinson, Montclair State, Ramapo and Rutgers (Newark) -- more so, with the changes in the last year. Seventy-six percent of WPC students applied for admission to one or more other colleges, compared to 65% at institutions nationally. Acceptances at other colleges are approximately equal to national figures, although the numbers of students accepted at four or more colleges is considerably less than elsewhere (6.9% vs 11.2%). For 75% of the WPC students, WPC was their first choice college (76% nationally). These data do not lend themselves to answers to the question of selectivity. It is difficult to tell, for example, how many students are making the decision on the basis of proper information, how many say it is their first choice because they have not considered other possibilities sufficiently, and how many have been forced by financial circumstances to "settle" for WPC and thus choose it as first choice for unfortunate reasons.

Academic qualifications of entering students are mixed. About one third of the entering class had average high school grades of B+ or better, another third had B averages, and the final third B- or less. For comparable institutions, almost half (47%) had high school averages of B+ or more. Another way of looking at academic performance is through class rank. Two thirds of the entering class graduated in the top 40% of their classes; 27% in the top fifth. Only 7% were in the lowest two fifths. Two thirds of the verbal SAT scores were in the 350-500 range, and about 50% of the math SAT scores were in that range.* The important pedagogical and curricular implications from these data arise out of considerations of "mix" of classes. The more heterogeneous a class in academic capacity, the more difficult it is to offer all students maximum opportunities to learn. On the other hand, too much homogeneity restricts the important peer learning which comes from conflicting values and orientations.

High school success, of course, importantly affects educational and career objectives and plans. Aspirations are governed in part by the students' sense of their manifest and latent competencies as they come to perceive them primarily through prior educational experiences. WPC freshmen evaluated their preparation in history and the social sciences as much better than in other subjects. Their evaluation of their high school courses reflects also, needless to say, their own competencies -- if one performs well, one often tends to ascribe it not only to one's own efforts but to the effects of others. Hence, it is not surprising to find many

* These data may be incorrect. In the FIPSE proposal where the figures are given, the percentages do not add to 100%.

students expecting to major in applied social science fields at WPC. Nineteen percent will major in business, 25% in education, and another 10% in the social sciences -- a total of 53%. Twelve percent intend to major in the sciences or math, 15% in the humanities, 7% in health professions (nursing), with the remainder scattered in other fields.

Ultimate occupational goals of WPC students vary considerably from the national norms. Business is an aim of 31% of the males (vs 20% for the nation), and 12% wish to be in the fine or performing arts (vs 6%). Only 2.6% of the men aspire to be doctors or dentists compared with 8.7% in other four-year colleges, and only 3.6% plan to pursue legal careers in comparison to 7.2% elsewhere. Freshmen women differ somewhat from the national norms, with 26% planning elementary education careers compared to 11% in other four-year colleges. This reflects, of course, the availability of the credential through WPC, but other local colleges also offer the education degree. The strong cultural norm of having women prepare for a "safe" career in education -- "just in case" -- may be operating here, and speaks to a problem for the college of changing this image somewhat, especially in the face of declining opportunities for employment in the field. Indeed, for women only 48% of WPC would-be education majors (vs 60% nationally) estimate that their chances are very good that they will find a job in their preferred field.

Occupational goals are also related to personal objectives. Data from the CIRP help understand WPC student orientations in college toward their curriculum and other college characteristics. Achievement drives can be inferred from several items. As is typical of most freshmen, WPC students want the accoutrements of status and prestige in traditional

American terms. Two thirds want to be authorities in their fields; a little less than half want to obtain recognition from colleagues; over a third want to be successful in their own businesses. Half would be very well off financially, and almost a third want administrative responsibility. Patterns of achievement drive in academics or arts also parallel national patterns (though self-assessed achievement drive is slightly below national norms). Sixteen percent want to achieve in a performing art, 10% hope they will contribute to science, 17-18% want to write original works or create artistic work.

William Paterson students have about the same orientations toward social and political activities as do their national counterparts. They have relatively little interest in influencing the political structure (13%), though they would like to influence social values (31%) and to participate in community action (33%), somewhat more than students elsewhere (but the percentages are still relatively low). Fifty-nine percent estimate that the chances were very good that they would vote in the November presidential election -- about the same as nationally. Political leanings of freshmen are slightly more liberal than those at other institutions, a bit unusual considering the religious and socio-economic backgrounds of these students. When asked about a variety of attitudes toward contemporary issues, WPC students come out about average -- 85% feel the government is not controlling pollution, 78% say it is not protecting the consumer, 79% feel it should discourage energy use, etc.

A measure of the homogeneity and heterogeneity of opinions on critical issues is useful in planning curricular offerings. There seems to be a strong consensus on the following matters (more than 75% or

fewer than 25% of the students agreeing strongly or somewhat: pollution control, consumer rights, energy use, job equality, taxing the wealthy more. On areas of campus politics, agreement was found in attitudes toward regulation of off-campus student life, abolishing college grades, college rights to ban speakers, and using the same performance standards regardless of open admissions. Opinion was mixed (40%-60% agreement) on the following issues: discouraging large families, sex without love, marijuana, individual's potential to influence society, student appreciation of college if they had to pay more, and student rights to ban speakers. Differences in attitudes are found when the majors are compared, particularly between nursing students and those majoring in the natural sciences.

Women consider keeping up with political affairs not as important as do women elsewhere (24% vs 41%). As with most other students, WPC freshmen want to help others in difficulty (68% consider this essential or very important). Developing a philosophy of life is a strong objective for WPC students, again, in line with national averages. Some other differences between WPC figures and national norms broken down by sex are worth reporting here. WPC men seem more anxious to have administrative responsibility (42% vs 35%) and less likely to consider developing a philosophy of life as important (56% vs 63%).

Given these objectives in life and career, what expectations do WPC students have for college in general and William Paterson College in particular? Here the CIRP form confuses two sources of motivation -- why attend college in general and what instrumental value college has once the decision to attend has been made. Also, the questions on the

form tend to be biased in "socially desirable" ways -- i.e., subtly constraining students to respond in ways that they think are "right." Moreover, the prime general source of pressure to attend college reported in recent research -- the percentage of high school peers who are attending -- is not present on the questionnaire. Nevertheless, it is possible to discern some patterns among the responses.

Not being able to find a job and not having anything better to do were least important among the reasons for attending, while parental pressure was considered as very important by about a quarter -- slightly less than the national averages at 31%. (A caution must be entered in interpreting parental desires as contrary to the students' own wishes. Some students probably wanted to go for other reasons and found their parents' wishes as confirming.) The remaining "instrumental" reasons for going to college from which students could choose in the questionnaire can be divided into vocational, social and educational/personal development. Nearly two thirds of the freshmen indicated that college was important for them in getting a better job,* and half believed that college was very important for them to make more money. Thirty-six percent consider college as important in preparation for graduate school. Over half (52.5%) plan to pursue advanced degrees after receiving their Bachelor's degree. This compares with 63% nationally, both figures being much higher than the percentages which will actually attend graduate schools. Freshmen, needless to say, have idealistic ambitions which they have yet to test either in the competition of

* The questionnaire is unclear as to whether the student views the B.A. degree or the skills which are acquired as the instrumental factor.

college or work. However unrealistic, such aims and ideals must be dealt with sensitively in the formative college years, particularly when students first enter. The sorting out of interests, the discovery of competencies and the management of emerging personal and vocational identities all are part of the responsibility of educators through curricular design, pedagogy and counseling.

About half of the entering student body as freshmen acknowledge planning to use college as a means of meeting new and interesting people (more women -- 59% -- than men -- 43%, both slightly less than the national averages). Since WPC students are largely commuters, they will tend to see familiar faces both at the College and will retain hometown friendships rather than form new ones. Such a recourse to the safe and comfortable does little to develop students' interpersonal skills nor to expose students to new values and ideas.

Among the reasons for deciding to go to college which received highest priority among freshmen at WPC as well as nationally was "to learn more about things that interest me" (73%), a common though cherished predisposition among entering students which needs to be very carefully nurtured. Others include gaining a general education and appreciation of ideas (64%), again revealing healthy propensities which can forestall premature foreclosure of vocational decisions under proper curricular and extracurricular management of campus academic regulations and informal norms. Becoming a more cultured person was very important to roughly 40% of the respondents. One suspects that the wording of the question may have disuaded some from choosing this option. The printout gives no data about the numbers of students who have answered "somewhat important"

to the question. This illustrates what is a general and important shortcoming of the ACE questionnaire -- the lack of distribution data on each question. We know only the percentages of responses to one category -- e.g., "very important."

The need to improve reading and study skills was considered a very important reason for attending college by only a third of the freshmen. Here again, the nature of the printout data prevents effective use of the answer to this question. It would be informative, for example, to be able to identify these particular students more precisely -- their other attitudes and background characteristics -- in order better to design an educational environment to meet their special needs.

Given the four most important reasons offered by WPC entrants for going to college: to learn more about things that interest me, to be able to get a better job, to gain a general education and an appreciation of ideas, and to meet new and interesting people, what is there specifically about William Paterson College itself which was of particular appeal? Four reasons were checked by about a quarter of the students (not necessarily the same quarter, of course): This college has a very good academic reputation (26%), this college offers special educational programs (26%), this college has low tuition (24%), and I wanted to live at home (24%). Only one other of the total of twelve possible responses (A friend suggested attending -- 14%) received more than 9%. Perhaps the most telling aspect of these statistics is the variation from national norms. In other four-year colleges, reputation was very important for 50% of the students, low tuition for 12% (the norms include private colleges, it should be remembered), and desire to live at home for 8%.

These data would seem to confirm the impression that many students attend the College either without knowledge of its reputation, without concern for it, or in spite of it. The data in the CIRP do not reveal this breakdown, but the data would be most useful in understanding the variety of student expectations of the environment.

In addition, the wide distribution of choices selected as very important reasons for attending speaks to the diversity of kinds of students at WPC, to their needs and to the complexity of the problem of designing a suitable educational environment. Some clues as to the manner in which student preferences are distributed in the freshman class are revealed by a breakdown of reasons using "expected major" as a classification. Among nursing majors, reputation (chosen by 43%) and special program availability (37%) were the most frequent responses. Social science majors, on the other hand, chose WPC because they wanted to live at home (21%), low tuition (26%), academic reputation (20%), on advice of someone who had attended (20%), and because of special programs (18%). Among education majors, the most important reasons were special program availability (48%) and academic reputation (36%) -- a response pattern not unlike that of nursing majors. Business majors, too, were moderately attracted by WPC's reputation (26%), but the major reason cited was the desire to live at home (30%), with low tuition (22%) and special program availability (20%) also relatively important. Natural science majors chose WPC because they wanted to live at home (27%) and because of low tuition (24%). Other reasons considered very important by this group were all less than 16%. Fine arts majors were attracted by the reputation of the college (21%) and by its special program (23%). They also want to

live at home (23%). Two reasons were important to humanities majors -- the reputation of the college and its low tuition. In sum, it would appear from these data that for nursing, education and perhaps fine arts majors, the special program and reputation of the college were very important reasons for a substantial number of students, but, importantly, still a relatively small minority. For the other majors, low tuition and the opportunity to remain at home were significant factors. Again, however, only a small minority of students (usually less than a third) checked this category as very important. These data reveal, then, unfortunately very little about the strengths of the College. No one feature (from among those few denoted in the questionnaire) seems to have been responsible for attracting a predominant number of students. The questionnaire is limited also by the response categories offered the student (very, somewhat or not important), the instruction that the student give an answer to <u>each</u> question and the printout which then gives us only the "very important" response percentages. We probably would not know what "somewhat important" meant to different students in any case, since for some it night mean just a bit less than "very important," while for others it would mean "only" somewhat important -- i.e., just a little bit.

All freshmen at the start of college have some worries about their capacities to compete in what they expect to be a much more rigorous academic environment with peers of greater intellectual ability and drive. Confidence in academic ability among entering students at WPC varies considerably by field of expected major, though in general the percentage of men who rate themselves above average is less than national norms (48% vs

59%). The percentage of women is about the same (56%). Nursing students appear much more confident than others (78%), women social science majors are at 43%, men education students at 65% (vs 56% for women), while for business majors about 47% of both sexes rate their academic ability above average. Women in the natural sciences are low (45%) though doubtless if we had comparable figures across the country, we would find this not out of line. Males in the fine and performing arts indicate the lowest percentage at 38%. Differences between the sexes in the humanities are also worth noting (50% for males; 63% for females). In general these figures are not unexpected, conforming for the most part to the sex-linked stereotypes of strengths in the various fields. If the College wishes to address itself both to the issue of sex biases in occupations as well as to the needs of these students, the data can be useful.

Other related trait self-ratings by WPC entering students also bear on this question. About a third of the freshmen feel that their athletic abilities are above average and a quarter believe they are more artistically gifted (62% for the latter among fine and performing arts majors). Self-appraised mathematical ability falls below national norms (29% vs 36%), but writing ability is approximately equivalent (low for business and natural science majors). Practically no students expect to fail a course, while 10% estimate their chances are very good that they will graduate with honors (though they probably do not know the honors requirements). About two fifths of the students expect to make at least a "B" average, usually without tutoring (except for natural science majors of whom almost 9% admit they will probably need some help). Their self-estimates of their intellectual abilities fall below national figures -- 40% see themselves as

above average (vs 47% elsewhere). Only 70% estimate that the chances are very good that they will obtain a bachelor's degree, compared to 75% for other colleges. Business majors are least confident on this score (62%). These figures are difficult to reconcile with other trait self-estimates such as the likelihood of dropping out (less than 1%).

Academic self-confidence is related, of course, to general feelings of self-worth. These attitudes are tapped by a number of questions in the CIRP questionnaire. In general, William Paterson freshmen see themselves as having slightly less leadership ability than the national average, but they rate themselves as about equally attractive physically, about equally popular and with average social self-confidence. Only 6% of the students estimate the chances are very good that they will seek individual counseling on personal problems. Others (the data are not given in the printout) may have indicated that there was "some chance." Doubtless also there are many who have some difficulty admitting to themselves that they may need counseling, and there are others for whom counseling will become a greater need as they grow and develop through the college years. It would be useful to know to whom these students turned in years past for help in personal problems in order better to plan counseling resources for them while in college.

Social and natural science majors estimate the chances that they will transfer to another college as higher than other WPC students (14 and 16% respectively), but for the College as a whole the figures are much lower than national averages (7.3% vs 14.2%). Their plans to persist at WPC are somewhat at variance with their estimation of the chances that they will be satisfied with the College (43% vs 54% nationally). Indeed, with

the exception of nursing majors (52%), relatively small minorities of students expect to be satisfied (low figures include, for example, only 18% of the women in the social sciences, 33% of the males in education, 33% of the males in business, 29% of the women in natural sciences, and 32% of the men in fine and performing arts). To a considerable extent these data confirm the reasons for selecting WPC college -- programs vs low tuition and nearness to home. The incoming proclivity of students to be dissatisfied with college is a major problem for any institution. At WPC it can be dealt with imaginatively for educational purposes. Creating a diversity of options for choice of curriculum and pedagogy is one way. For example, estimations by students of the likelihood of changes in major and changes in career appear in line with national averages, though considerable variation occurs by expected major. Almost a quarter of the male social science majors and female natural science majors strongly expect to change majors. Many other students will want to change but will have difficulty dealing with the decision. The College can do much toward smoothing these transitions so as to ease the psychological burden on students.

Some self-appraised personal qualities of entering students may be of interest to faculty who wish to make appropriate changes in their styles of teaching. Freshmen about to enter WPC say they are cheerful (65%), not defensive (30%), original (43%), not sensitive to criticism (24%), not stubborn (34%), and understanding of others (72%). These are fairly well in line with national averages.

Finally, patterns of planned support for college education indicated by entering WPC students give some indication of orientations and time use which may be useful in developing appropriate educational environments.

WPC students appear to be less dependent on loans and grants to pay for their first year's education than do their national counterparts. For example, only 3.6% of WPC students will have support from federally guaranteed student loan programs vs 8.4% for students at comparable institutions. While support from private grants appears at about the national average, this is due largely to the fact that nearly 16% of the nursing students and 11% of the education majors expect financial aid in this manner. Fully a third of the entering student body expects to receive no support from parents or family (42% of the nursing majors and 24% of education majors). Somewhere between a quarter and a third of freshmen will use personal savings of from $1-$999 to support themselves in the first year of school. Support from full-time work will be available to 8% of the students, while a little more than half (53%) will earn funds through part-time employment (national norm: 49%). Unfortunately, it is difficult from these figures to determine the potential impact of adequate or inadequate financing on WPC college students. Because most students live at home, there may be relatively little cause for financial distress. Yet the EFT questionnaire seems to indicate a concern over part-time jobs. We can not tell from the CIRP questionnaire whether part-time jobs are considered essential or whether they are intended to provide the kind of financial flexibility which makes college life a bit more pleasant (clothing, automobile, vacation trips, etc.).

It is difficult to summarize these findings, and it may not be functional to do so. Different potential users on campus may interpret aspects of the profile differently. The data themselves are, of course, neutral. They do not point to any one approach to the education of

William Paterson College students without a guiding educational philosophy. For example, the minutes of the EFT faculty meetings sometimes reveal a latent hostility among some faculty toward students who are confused by their first encounters with college. For these faculty students ought to be more in control of their emotions and more in command of their academic lives. Pedagogic logic would dictate for these professors a concerted effort to constrain students as quickly as possible to make decisions about their immediate involvements in course material and about other aspects of their lives. An alternate approach, of course, under a different guiding philosophy (suggested indirectly by other EFT faculty) is the generation of a rather lengthy sustained period of "safe" confusion and ambiguity. Under these conditions, students would be encouraged to flounder, to express doubts, to seek advice and assistance, to admit anxiety. Indeed, they would be challenged to question their own belief systems and repertories of behavior which have served them so well through their teen-age years. Needless to say, such threat and anxiety must be engendered in a comfortable harbor of structured resources -- easily perceived psychological moorings staffed by competent faculty and counseling staff.

The minutes of the EFT faculty meetings provide a rich source of information about freshmen at William Paterson College, as well as about faculty educational philosophies, expectations of students and faculty attitudes toward classes, themselves and life in general. For the most part, their impressions of their students confirm the inferences which can be drawn from the data collected via the CIRP form. They find students enveloped in patterns of thought and behavior which derive from American

values, youth culture, parental constraints, high school habits of instruction and student passivity, idealistic expectations of college and local community norms. Students in their seminars appear both unwilling and unable to deal with freedom of choice in class, curriculum and non-academic areas. Weaning them away from home, home values, orthodoxy, game playing, nowness, and from sentient to conceptual and symbolic thinking constituted the apparent task of the seminars. The faculty addressed these problems in a variety of fascinating ways, and their frustrations with this most demanding educational problem reveal much about the complicated dynamics of instructor-student interaction. Issues are raised as to appropriate "mix" of students both in the entering cohort as a whole and in each class. Questions of class size, media, structure and format are intertwined in the discussions of how best to manage the educational evolution of WPC students to more sophisticated states of being and doing.

The profile -- or perhaps more correctly -- the data presented above should offer some suggested modes of addressing the problem of developing a philosophy of education for a state college. As I have indicated throughout the description of the data, what is needed is more complete information and more precise understandings of what the data mean. In the next section, I outline a model for a student data management information system which should answer some of these concerns.

Part II -- Data Collection System

The decision as to which kinds of data to collect from entering students must be based on the answers to several questions:

1. What kinds of information are needed by whom, when and in what form?

2. How capable are the potential users in their ability to utilize the information? How much training is needed and possible?

3. Is the data management and retrieval system sufficient to accommodate new data? Are personnel available and trained in management information system data manipulation and report formatting?

4. What problems will be encountered in collecting the data from entering students?

5. How will the entering student data be integrated with data to be collected at later times?

The traditional approach to finding the answers to these questions, particularly the first, is to perform what has come to be called a "needs assessment." Questionnaires are sent out and/or interviews conducted with key personnel to determine from them what kinds of data they would find most useful in their jobs. In consultation with a management information system consultant, a data system is then designed so that each user receives the needed information when propitious and in the form most appropriate. Such an approach was not possible in this case. While the notion that student data can be used for educational and management purposes is not new -- faculty and administrators have been making use of "tacit" knowledge of students gained through formal and informal contacts -- such use has not been systematic. Typically, faculty or administrators' "muddle through" several abortive experiments in curriculum and pedagogy until the most

appropriate "fit" is found to meet particular student body needs. We test the limits, in other words, of students' cognitive abilities and psychological dispositions and then pitch our educational message to reach the most students to maximum advantage.

That this description of typical practice is valid comes out of a reasonably exhaustive search of the literature on the subject and an assiduous effort to uncover more sophisticated approaches around the country. I contacted many colleagues involved in the testing profession, wrote to agencies which publish tests for college students, talked with persons at national associations who might be in touch with new developments in the field, and, finally, conducted a small survey of the big ten schools, the Ivy league schools, and several other selected colleges and universities. None of these efforts proved fruitful, though beginning efforts in these directions were discovered (see Appendix A).

There are several reasons why the state of the art is so undeveloped. The clearest is that most faculty and administrators have no formal background in the area of student data use. Nor, indeed, are they familiar with the now voluminous literature on college students -- on the research revealing their common problems, orientations, objectives, needs, dispositions, behaviors, learning styles. This is not to deny that faculty and administrators know a great deal about their students. It is just, as above, that they have a different kind of knowledge which they put to use in different ways.

The problem is compounded when one considers the variety of objectives of undergraduate education that are held by the staff in a college. Some adhere to age-honored tenets of liberal education, some to vocational relevance; some to a philosophy which makes cognitive concerns predominant,

others to one which says that personal growth is all important; some to a conception of teaching and curriculum which makes "coverage" of the basics a primary concern, others to a notion that a few things known well will lead ultimately to breadth at a later time. The kinds of student data felt to be needed by each of these different kinds of faculty and administrators are themselves quite different. What is crucial to one person may be totally irrelevant to another. Perhaps more important, however, is the fact that few faculty and administrators have brought to the level of consciounsness the connections between their privately cherished educational objectives, most commonly held in somewhat ineffable form, and the kinds of information which might be useful to them in their efforts to achieve those objectives. For example, it is rare to find an instructor in a sociology class with strong affective objectives for his or her students who would know what to do with information about the affective condition of entering students. When Dr. Adelman and I asked for some discussion of these matters at a meeting of the EFT instructors in May of this year, we found faculty relatively unprepared to deal with the issues. With some exceptions, they could not imagine what kinds of data might be helpful to them in the conduct of their classes. It should, of course, be noted that they had little time to think about the problem and that many creative answers might be forthcoming after some deliberation. In talking with other non-academic staff, I found a smiliar lack of knowledge (and in some cases, interest).

A "needs assessment" through questionnaires to potential users, therefore, was viewed as probably not a workable method for determining what the data needs were at various points in the College. It became necessary, consequently, to make some judgments independently about the kinds of data which might be most useful to both faculty and administrators who might

have a variety of possible educational philosophies and objectives. I made the assumption, furthermore, that it would be better to design a comprehensive, sophisticated system now, with the hope that through a number of faculty and staff development efforts, the system could be made eventually to serve efficiently and effectively. While on the one hand, I was concerned in the development of the system for matching precise position needs with proper data, I also was aware of the dangers of reductionism. The "whole student," to borrow the cliche, must be known, and that wholeness may not become evident simply through the sum of the discrete parts. Hence, I have included in the recommended data collection design a number of measures which have no immediate apparent utility. The measures may yield general characterizations of "typical" students or very specialized data which may be relevant in some as yet undetermined way. It is likely that creative faculty and administrators will extract from these more broad data bases portraits of their students which can be used imaginatively in curriculum design, pedagogy, and non-academic administration.

THE CLASSIFICATION OF USERS AND VARIABLES

Four categories of potential users of student data ~~at WPC~~ were envisioned:

Teaching faculty

Academic administrators (chairpersons, deans, academic vice-president)

Non-academic middle management (registrar, admissions director, financial aid officer, institutional research officer, development/public relations director, student personnel staff, others)

Top management (president, staff)

For each of these positions, a gross task or role analysis was performed so that the major dimensions of the activities of the incumbents could be

comprehended. For example, an analysis of the teaching role resulted in some six major variables which are available to the faculty member as he/she makes decisions about teaching. These are described more fully below, but for purposes of illustration, these are (1) content, (2) classroom format/structure, (3) non-instructor-centered out-of-class activities and structure (homework, other assignments, fieldwork), (4) instructor-centered out-of-class teaching-related activities and structure, (5) evaluation modes, and (6) personal style: classroom climate. For each of these variables, a number of different kinds of information about entering students are relevant in the degree to which they bear on cognitive and affective growth. The next step in the procedure was to identify kinds of potentially relevant student data. Finally, a search was made of nationally published or widely used data collection instruments, and these were examined for suitability in measuring the variables. One or several were selected if appropriate; if not, a recommendation was made that a locally designed instrument be developed. A similar analysis was performed for each of the other three categories of users. In the next several sections, each user category is discussed.

USES OF STUDENT DATA BY TEACHING BY TEACHING FACULTY

As noted above, there are six closely related aspects of the learning environment which the instructor can manipulate to fit the learning styles and needs of students. Falling into two general but connected categories -- content-structural and instructor-interaction, these are:

Content-Structural

1. Content -- the subject matter, sequence, and pace of the material offered

2. Classroom Format/Structure -- the mix among alternative teaching styles, including lecturing, discussion sessions, computer-assisted instruction, audio-visual presentations, self-paced learning

3. Non-Instructor-Centered Out-of-Class Activities and Structure -- homework assigned, fieldwork, out-of-class peer meetings related to course

Instructor-Student Interaction

4. Instructor-Centered Out-of-Class Activities and Structure -- meetings with individual students and groups of students related both to course work and non-course related matters

5. Evaluation Modes -- kinds of formative and summative evaluation

6. Personal Style: Classroom Climate -- the style of interaction between instructor and students and among students, including didactic vs. evocative modes, warmth and concern vs. coolness and distance, and personal visibility/role modeling vs. low-key profile stance

Curricular Constraints

Choices of specifics within each of these aspects must, of course, be governed not only by the characteristics of the students in the particular course, but by the likely patterns of course-taking before and after. It would not be appropriate, for example, for the instructor in the entry level physics course to assume a completely open curriculum (i.e., without a "necessary" content coverage) if the instructor in the course following expected a certain level of comprehension, competence and readiness for students entering the more advanced course. Nor, conversely, does it make sense to have a highly structured syllabus for the first course, if objectives for subsequent courses are not linked to it, or indeed, if curricular objectives for the undergraduate student throughout the four years do not require it.

Learning Theory and Educational Goals

The criteria for choice of data which may be relevant to these instructor controlable aspects of the learning environment are also determined by rather complex and as yet competing theories of student learning. For example, if the instructor believes in "behavior modification," he/she will require different kinds of data from that needed by a cognitive theorist following a "mapping" model, and from yet another instructor assuming more connections between cognitive learning styles and emotional and affective growth through various stages and consequences. The choice of data thought to be pertinent to an individual instructor is also determined by the instructor's educational ideology or objectives/goals vis-a-vis students. Those believing, for example, that college education is for students who can achieve at least at minimum standards differ from those who believe that students who have been disadvantaged emotionally and intellectually by the culture, family, or other circumstances require special treatment.

It is not the intention of this report to sort out for the instructor which particular learning theory or/and set of objectives are appropriate to him or her, nor to identify what kinds of data are to be used, given a choice of instructional style (though future staff development efforts should be oriented in this direction -- see Recommendations section below). Rather, the report suggests kinds of data which in general may be relevant to a variety of theories and objectives. Presented below, therefore, are the six learning aspects again and the kinds of data which might be relevant, as well as specific instruments which can be used to collect the data.

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Insert Exhibit I about here

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EXHIBIT I
Student Data Relevant to Six Aspects of the Faculty/Student Learning Environment and Names of Instruments Which May Be Used to Collect Needed Data

Learning Aspect	Relevant Entering Freshmen Data	Instruments
Content-Structural		
Subject matter	Cognitive learning style	P1, C1, C5, O11, O18, O19, O20
	Intellectual dispositions	P1, P5, C10
	Practical/theoretical orientations	P1, D4
	Thinking/reasoning capacity	P2, P3, P4
	Value orientations	P3, P11, C6, C7, O5, O6, O7, O8, O11, O16
	Extracurricular interests	O3, O6, O7, O8, O16, O20
	Vocational aims	C10, C11, O2, O9, O11, O16, O20
	Expected major	O3, O16
	Tolerance for complexity/ambiguity	P1, P7, C6
	Knowledge of material on entrance	O19, G2, G7, G8, G11
	Interest in material	C3, C4, O16
Classroom format	Preferred instructional styles	P2, C1, C3, C4, C8, O3, O16, O20
	Previous format experience	O5, O16
	Achievement drive	P2, P5, C1, O9, O16
	Group/interpersonal skills/needs	P2, P3, P4, P10, O16
	Introversion/extroversion disposition	P1, P11, O9, O11
	Autonomy needs/strength	O6, O9
	Reasons for attending college	O6, O10, O13, O16, O21
	Expectations	O1, O4, O5, O12, O14
Out-of-Class (non-instr.)	Past homework load tolerance	
	Study habit patterns	O16, S1-4
	Family support/home environments	O16
	Other time commitments	O16
	Proximity to peers	O1, O14, O15, O18, O20
	Campus environment	--
	Peer interaction patterns	
	Expectations	O4, O5, O14
Instructor-Student Interaction		
Out-of-Class (instr.)	Orientation to authority	P1, C8, O9
	Need for academic counseling	O3, G3-13, D1, S1-4
	Need for personal counseling	P2, P6, P9, O9, O11, O12, O16, G1, D1, D2
	Need for vocational counseling	O16, O19, G1
	Stage of developmental growth	O12
	Expectations	O14
Evaluation Modes	Test-taking anxiety	C9
	Writing skills	G3, G5, G6, G7, G8, G9, G10, G12
	Oral skills	
	Evaluation preferences	C1, O16
	Anxiety about competence	P9, O9
	Cognitive feedback needs	P8
	Affective feedback needs	P8, P11
Personal Style	Need for models	
	Need for authority	P1, P8, O11
	General anxiety level	P1, P9, C9

It should be clear from the exhibit that a number of instruments exist for collecting some of the desired data, while none exists for a few. In these latter cases, the College may have to design its own. A choice of particular instruments where there are several is given in the Recommendations section below.

USES OF STUDENT DATA BY CHAIRPERSONS, DEANS AND ACADEMIC VICE-PRESIDENT

If the mapping of the domains of college instruction is still in a relatively undeveloped state, the ordered investigation of the roles and responsibilities of academic officers on college and university campuses remains even less adequately charted. The literature does seem to support the notion that the following activities occupy most of the time of the three kinds of officers, though there is variation among them:

Developing Institutional Philosophies, Goals, Priorities
Planning New Curricular Offerings
Planning Future Staffing Patterns
Evaluating Existing Programs
Recruiting Faculty
Evaluating Faculty for Promotion and Tenure
Budgeting, Dispensing Funds, Accounting for Funds
Maintaining Faculty Relations and Morale
Attending to Inter-Unit Relations (below, same level and above)
Research Grant Administration
Non-Academic, Extra-curricular Program Integration
Reporting to Superiors
Conducting Public Relations, General Fund Raising, Ceremonial Functions
Formulating Administrative Policy
Faculty Development (progams and counseling)

Clearly, student data are not relevant to all of the above functions. There are, however, a number of academic responsibilities for which student data are very much needed. These are suggested in Exhibit II.

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Insert Exhibit II about here

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Many of the data relevant to academic decision-making by deans, department chairmen and the academic vice-president are similar to those required by faculty in the classroom. Hence, in most cases the same instruments can be used to collect the data. Accessing the computer student data file will require the writing of several programs so that the data can be made available in the aggregate forms most useful to the decision-maker. For example, the chairman of the department of sociology will periodically require a variety of data both about majors in his department as well as about students.

It should be clear that when decisions are made by academic staff about programs and other curricular matters, it is necessary to abstract from the specific measures or data to form judgments about groups of students. Thus, in Exhibit II, the phrase "sub-cultural breakdown" occurs. What I mean here is that just as the individual faculty member can identify sub-groups within a particular class which require differential treatment, so also a department chairman or dean will want to discriminate sub-groups among the undergraduate population as a whole. In that way, he can better address the needs of those groups. The composition of the groups can be determined through computer-assisted analysis of multivariate data. Many different variables obtained from entering students can be analyzed simultaneously and groups of students with similar profiles

Exhibit II

Student Data Relevant to the Learning Environment As It Affects and Is Affected by Academic Administrators

Academic Administrator Role	Variables Influencing Administrator Action	Relevant Entering Freshmen Data	Instruments
Planning New Curricular Offerings	Integration of courses, old and new	Probable Freshmen achievements Probable majors	G7, G14 W1, W2
	Experimental courses -- number and variety	Tolerance for complexity/ambiguity Interest in material	P1, P7, C6 C3, C4, 016
	Remedial courses -- number and variety	Knowledge of material on entrance	G3-13, D1, S1-4
	Planning sections of larger courses	Sub-cultural breakdown of student body	—
Developing Institutional Philosophies	Distribution requirements	Breadth of knowledge/skills	018, 019
	Sequencing of courses, programs	Cognitive learning style	P1, C1, C5, 011, 018 019, 020
	Class size	See Exhibit I — classroom format	—
	Class mix — majors/non-majors; underclass/upperclass	Introversion/extroversion disposition	P1, P11, 09, 011
	Objectives of each course (instructor and college)	Reasons for attending college	06, 010, 013, 016, 021
	Objectives of major (instructor, department, college)	Reasons for attending college Vocational aims	06, 010, 013, 016, 021 016, 019, G1
	Objectives of undergradaute education (college)	Reasons for attending college Vocational aims	06, 010, 013, 016, 021 016, 019, G1
	Drop-out and transfer rates	Plans and plan certainty Readiness/capacity to take advantage of college	06 06
Evaluating Faculty	Student evaluations of faculty	Expectations of college, classroom Preferred instructional style	01 P2, C1, C3, C4, C8, 03, 016, 020
	Student evaluations of courses	Expectations of college, classroom Preferred instructional style	See Note Appendix A, Index. See above.
	Student self-evaluations — cognitive/affective	Reasons for attending college	See above.
	Student achievement -- cognitive	Knowledge of material on entrace	See above.
	Student achievement -- affective	Affective states on entrance	P1-11, 09, 011, 012
Recruiting Faculty	Faculty "mix" to fit student "mix"	Sub-cultural breakdown of student body	—
	Student/parent demands for special curriculum	Family backgrounds, education, expectations	06, 08, 016
Faculty Development	Student expectations of instructor	Preferred instructional styles	See above.
		Sub-cultural breakdown of student body	—
Conducting Public Relations	(See under institutional functions.)	—	—
Non-Academic, Extracurricular Programming	(See under institutional functions.)	—	—

NOTE: Most of the variables influencing academic administration must be supplemented with longitudinal data from other sources, such as statistics on changes in major, dropouts, transfers in, transfers out, etc.

can be identified. Their needs can then be selectively addressed. Note that it is not necessary that the students themselves meet formally or even be identified individually (though in some cases, this might be helpful). It is important only to arrange programs such that their needs collectively can be more selectively met. In still other words, using student data to create identifiable sub-cultures removes the danger of treating the entering freshman class as a monolith. The process of locating sub-cultures through use of a computer requires some programming skill and takes time. Initially, academic administrators can use the raw data and create the sub-cultures intuitively. When the sub-culture computer program has been written and tested, it can then be applied to the data for each entering freshman class.

USES OF STUDENT DATA FOR INSTITUTIONAL FUNCTIONS

Student data are presently used by a number of non-academic administrative officers. The following are among them:

Registrar
Admissions Director
Financial Aid Officer
Institutional Research Officer
Development/Public Relations Director
Vice-President or Dean of Student Services
Learning Resources Head (Librarian, A/V Head, etc.)

The data are gathered in large part through separate efforts, and decisions are commonly made on the basis of the data collected by each office. While I have not discussed student data needs with each of these officers, I have in Exhibit III suggested a number of variables with which such officers are typically concerned and have indicated both student data relevant to their concerns and the instruments needed to collect them. In most cases, these data would regularly be collected for use by other

persons on campus but would be formatted differently in the reports made to these persons.

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Insert Exhibit III about here

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USES OF STUDENT DATA BY TOP MANAGEMENT

The president and his staff are likely to need student data for the following general purposes:

Interinstitutional relations/consortia
Town-gown relations
Institutional growth and development

In general, the president will be concerned with the development of a distinctive institution whose values are widely and strongly held by members of the institutional community. The establishment of such institutional distinctiveness permits a consensus on educational philosophy, institutional goals and policies and practices. Much the same as a person who has a clear sense of his own identity can develop strong, workable relationships with others, so also institutions must determine what they are and can and want to be. Student data relevant to these concerns and to the purposes noted above have to do with the differentiation of functions of colleges in a particular region and the necessity to provide opportunities for any would-be college student to find a campus which is most suitable to his or her dispositions, academic and vocational interests. Through cooperative arrangements institutions which have carved out particular realms of expertise can exchange students and faculty to provide complementary academic services.

Exhibit III

Student Data Relevant to the Jobs of Various Non-Academic Administrators

Administrator Role	Variables Influencing Administrator Action	Relevant Entering Freshmen Data	Instruments
Registrar	Class time scheduling	Place of residence; commuting time	W1
	Room assignments	Expected major; course plans	W2, O6
	Advisor assignments	Expected major; interests	W2, O2, O3, O6, O18, G1, G7
Admissions Director	Academic qualifications	Predictors of college success	G2-G14, O19, W6
	Cultural mix; socio-economic mix	Family backgrounds; ethnic balance	O6, O16
	Geographic mix	Place of residence; family residence	W2
	Image of college -- attractions, detractions	Expectations	O6, O14, O15, O17, O18, O21
	Yield rate	Other colleges considered, applied to, accepted at	O6
		Non-college options	--
Financial Aid Officer	Needs for financial assistance	Family and personal resources	O6
		Veteran status; minority category	W2
Institutional Research Officer	Costs/SCH by major, school, college, level, etc.	Expected major; course plans	W2
	Class size exposure for freshmen	Expected major; course plans	W2
	HEGIS requirements	Enrollments, ethnic data	W2
	State reporting requirements	Enrollments, ethnic data	W2
Development/Public Relations Officer	Individual students with special merit, achievements, talents	Special high school honors, achievements	--
	Class composition/mix	Composite profile	--
	Parents of distinction/wealth/local power	Family background	--
	Image of college	Expectations	O6, O14, O15, O17, O18, O21
Student Services Staff	Extra-curricular programming	Interests in intellectual, social and physical activities	O2, O3, O6, O18, G1, G7
	Personal counseling	Personality disorder proclivities	D1, D2
		Personality change/growth transition stage evidence	--
Learning Resources Staff	Book and periodical use	Media habits	O16, S1-S5
	Reference and reading room use	Study habits	S1-S5
	Instructor use of CAI, A/V, TV, Tapes	Learning style preferences	P2, C1, C3, C4, C8, O3, O16, O20

The clear identification of the character of the applicant pool to William Paterson College will help establish the domains of institutional distinctiveness which it needs and toward which it should aim. As noted earlier, the young persons who apply to state colleges are regionally bound and have relatively less to choose from among educational opportunities. If, therefore, there are special qualities of the student body and the campus which can be determined through the collection of student data, a somewhat greater number of discrete choices will be made possible.

Part III - Summary and Recommendation

Any system for anticipating the needs of entering students and for monitoring their progress in these days of limited funds and of demands for accountability must be efficient. With unlimited time and funds, every faculty member could be asked to interview every student, or/and a trained corps of skillful interviewers and test developer/administrators could be hired. A profile could then be drawn which was deep, sensitive and hopefully insightful. But funds are limited, faculty time is scarce and faculty and student interests in expending huge amounts of energy in this kind of exchange are absent. What must be substituted instead is a careful sampling of the kinds of information of potential interest and an equally selective sampling of the students (lest they be so burdened with questionnaires that the data produced are biased and suspect).

When the present modes of collecting data from students at William Paterson College are evaluated as a whole, it would seem both that more and better data could be obtained with somewhat less personal energy expended. The Entering Freshman Topology program provided an extraordinary opportunity for the College to discover something about its students and about the capacity of the faculty to collect information about the student body. My own judgment is that while the meetings of the EFT faculty were extremely provocative and useful, the discussions served primarily as a consciousness-raising exercise for the faculty participants and as a quite valuable cross-disciplinary communication mechanism. Without question the faculty will be much better teachers, and doubtless more complete persons in their own terms, as a result of their experience. The college

will also benefit from the establishment of a more closely integrated human community. I can not, of course, comment on the effectiveness of the EFT program for the freshmen, but I look forward with some excitement to the evaluations of the new FIPSE-funded enterprise beginning this Fall.

My sense is that the faculty at William Paterson College, as at most colleges, are not sufficiently knowledgeable about undergraduate students and about learning theory to be able efficiently to extract useful information about them in the process of designing and teaching an experimental course. They are subject matter specialists with obvious concern for students and with great empathy. They do learn about their students, needless to say, and will use their learning in future course and pedagogical planning. But as a resource for gathering information systematically, the exploration of ideas and the exchange of information at the meetings is somewhat less than it might be. This is not to say that faculty should not be used as sources of information about students. Rather, it is to suggest that they need more structure and more instruction in what to look for and what kinds of things to report. I will have more to say on this subject below.

As to the other data sources, I find them also useful, but lacking in a number of ways. In Part I of this report, I noted several deficiencies in the CIRP questionnaire and printout. The ambiguities in both have been criticized in the literature*. In addition, comparative data from institutions similar to WPC would be much better than the national norms on the

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* See, for example, Jonathan R. Warren, "Who Wants to Learn What? Evaluation With a Changing Clientele" in C. Robert Pace (ed.), "Evaluating Learning and Teaching", New Directions for Higher Education, Winter, 1973. No. 4.

printout. Fairleigh Dickinson, Montclair State and Ramapo, among others in New Jersey, have participated in the CIRP program, and a cooperative sharing enterprise with them would prove mutually beneficial. (For other participants, see Appendix C.) It may be helpful in the meantime to use the published norms in the annual publication of the American Council on Education (The American Freshman) which gives data for different kinds of institutions: public four-year colleges, Catholic four-year colleges, co-educational four-year colleges (omitting single sex colleges). Academic reputation, for example, is a "very important" reason for selection of college for a higher percentage of students in Catholic, co-educational four year colleges than at four year colleges in general (difference of about 6%). With this information, the finding in Part I, that academic reputation as a reason for students applying to WPC was so much lower than national norms becomes even more striking.

The CIRP program is, of course, convenient if moderately expensive (at $150 plus $.50 per student plus mailing costs), in that the forms are made available by UCLA and are processed out there. At the very least, if a decision to continue to use the CIRP is made, a tape of the data should be purchased annually so that the available information can be extracted in more meaningful forms and formatted for more efficient use by different campus officers. The tape costs $35 plus $.03 per student. Sent with the tape is full documentation and an SPSS computer program deck of variable and value label cards. Student social security numbers are included except where the student has forbidden it by checking a box on the CIRP form. While a quarter of the WPC freshmen declined to have their social security numbers transmitted on the tape (slightly higher than the national averages), I believe that this percentage can be reduced through

proper urging before the administration of the questionnaire. Having the tape will permit sharing with other institutions. It will also allow the data to be analyzed in ways which are difficult at present. Questions which are related to one another are scattered throughout the questionnaire, and it is a struggle to try to find the relationships among them (e.g., question #29, political views; question #35, attitudes; question #24, trait self-ratings regarding political liberalism/conservatism). Finally, social security identification numbers will also permit linking CIRP data with other student data files.

There is some considerable support for the argument that all the required data need not be collected from admitted freshmen who plan to attend. Certainly, the admissions form itself can be expanded slightly to permit the collection of data which could be used to understand the character of those students who applied to the College, and were not accepted or were accepted but then decided not to enter. The ACT service offers some good advice on this count. Perhaps more important, much information about the appropriateness of curriculum and pedagogy can be obtained from students already on campus -- particularly those kinds of information which are not affected by student growth and development. For example, there is no special reason why certain kinds of background information about the students can not be obtained from upperclassmen. For example, with respect to WPC's overwhelmingly live-at-home student body, it would be useful to know the number of older and younger siblings, number of persons living in the home, persons with major disabilities or handicaps in the home, number of books in parents' library, number of magazine subscriptions, etc.*). Asking these

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* Of course, it may be decided that the variables in this particular example are important enough to gather from each student. Other examples may be given, however.

kinds of data of upperclassmen will leave room on the entering student questionnaire for questions which yield baseline data against which comparisons can be made with data collected later in the student's college experience. Upperclassmen can also respond to questions about the campus environment with the data used for comparison with freshmen expectations and images. Exhibit IV, which follows, describes a model of a data collection system involving various constituencies in the program.

(Insert Exhibit IV about here)

The final decisions as to the nature of the student data file to be established will depend as noted earlier, on the particular uses to which the data are put. If, for example, each faculty member wishes to have specific data about each student in his/her class, then those data can be collected on entrance to the college and reproduced through the computer by class each semester. Or, it may be that each faculty member will want to collect the data from each class through questionnaires distributed at the start of each semester. This, of course, burdens both student and faculty member, but it saves computer programming and processing time and expense. Some of the programming costs are one-time costs, however, and subsequent processing time will be minimal.

There are, in addition, certain kinds of data which are of potential general use, but which may not be worth collecting from each student for classroom use by each instructor. For example, it may not be of interest to an instructor in chemistry to know the attitude of each student in his/her class with regard to marijuana laws. The instructor may, on the other hand, find it useful to know that for the College as a whole -- or

Exhibit IV

Model of Student Data Collection System

Sample Group	Number in Group	Date of Instrument Administration
1. Non-Admittees, Admittees Who Declined	All	Application Time
2. Entering Freshmen		
Whole Class	All	Application time, summer
Sub-samples	@75	Summer
3. Sophomores, Juniors, Seniors		
Whole Class	All	Fall
Sub-samples	@75	Fall
4. Faculty Teaching Freshmen	All	Mid-Fall
5. Student Personnel Staff	All	Mid-Fall
6. Others (e.g., parents)	Varied	Periodically
Effectiveness Evaluation Data*		
1. Rising Sophomores	All	Summer between freshman and sophomore years
2. Seniors	All	Spring of senior year
3. Alumni/ae		
Most recently graduated class	500	Late Fall, Spring
Graduated five years earlier	500	Spring
Graduated more than five years earlier	Varied	Periodic

* Note that this includes only one dimension of institutional effectiveness - student growth and development

perhaps for majors in his Department if the course is an upper level course -- that 58% of the students believe that "marijuana should be legalized."* Data of this nature can be obtained from relatively small samples of the undergraduate or freshmen population. As few as 30 men and 30 women selected under controlled random procedures are an adequate enough sample to provide extremely reliable data. In addition, then, to a general questionnaire to be administered to all students, as many as twenty small sub-samples in the freshman class can be asked to complete short (less than fifteen minute) surveys. As an example, the administration of a short-scale psychological inventory such as the Rotter Internal-External Locus of Control to a small sample might result in much valuable data about the entire entering student body.

Survey research is only one way of obtaining information from a student population, as the EFT project was designed to show. Interviews and informal contacts with students permit more intensive, in depth discussions which yield information about students which they may be reluctant to reveal in a questionnaire, or/and which the questionnaire preparers may not have thought to ask. The problem is how to gather such information efficiently and how to make it available for general use. There are a number of ways of doing this.

First, a set of broad questions** of interest to decision-makers on campus can be drawn up and distributed to all persons who have contact with students. It is especially important that the list include college counseling and advising staff and other student personnel staff. These persons can be asked to complete the questionnaire at periodic intervals

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* Here again, incidentally, the CIRP question is confusing -- does it ask about smoking or possession of large amounts?

** About the entering freshman class

during the year. Through a variation of a "Delphi" technique (a method of collecting and sharing information developed initially at the Rand Institute), the data from the first round can be summarized and redistributed to the original respondants. At that time, a request is made for respondents to embellish the data and/or to disagree with the generalizations and to justify the reasons for any deviations from the consensus. Modifications are then distributed once again until there is general agreement on the perceived reality. The second set of questions can be administered to the group while the first is being processed. Not only is this a reasonable way to collect information about students efficiently, but it gives participants a sense of contributing meaningfully to the data base on which important decisions are made. In some cases, it also involves otherwise uninterested persons in thinking about educational issues. This is not to say that this impersonal form of distant communication should be substituted for EFT-type faculty discussions. It is to argue for a more structured approach to gathering information from those persons most intimately in contact with students.

An important variation on this approach is to use the data from questionnaires obtained directly from students not only for decision-making but for discussion purposes. With some exceptions, most faculty and others can benefit from discussions about goals and objectives of undergraduate education, about curriculum, pedagogy, and the nature of student growth and development. If the focus of these discussions is the data obtained from students at WPC or about to enter it, the faculty will find it more relevant to their current concerns. Instructional development centers, or more broadly, faculty development programs, have been growing rapidly in the last several years, around the country especially with the

increasing problems of steady-state staffing afflicting most institutions. (I understand that there have been some shifts in enrollment patterns at WPC which leave the Education faculty with a relatively high faculty/student ratio, so I surmise that WPC has not been spared.) Such programs make use of recent literature in the area which might alert faculty to changing features of student bodies and to the dynamics of faculty-student exchanges in today's colleges. I have listed in Appendix D a very short list of books which cover these subjects.

Faculty and staff training should also be organized on a systematic, on-going basis. I was pleased to hear that the College has organized a task group to think about the development of a management information system using the student data base. I assume that the implementation of the system will require the training of various decision-makers, including faculty, in the use of the system. It is conceivable that Teachers College formally, or its faculty informally, could help plan and partially staff a faculty and staff development program. It would also be beneficial for members of the WPC administration and faculty to visit other faculty development programs, particularly those which are especially concerned with relating student data to changes in curriculum and pedagogy. In Appendix B, I have listed a few such enterprises in process around the country.

I turn now to the question of the setting up of a data collection and management information system at WPC. It is evident from the long lists of possible measures of each of the critical variables for the administrators and faculty listed in Exhibits I, II and III that the choice of which instrument in particular will be difficult. Indeed, it is my judgment that in many cases parts of instruments must be extracted and integrated with others.

The CIRP instrument and data processing probably should not be continued, though I would like to see retained a fairly large number of questions from the CIRP questionnaire. In part, this is because longitudinal data should be available for comparison with data collected from early administrations of the CIRP instrument, and in part because a number of the questions are good ones. Furthermore, while regional consortia for data exchange (or even statewide planning in this regard) would be better for data comparison purposes, such an possibility will not be realized until some time in the future. In the interim, the ACE norms are useful, even in the aggregate form they now take.

Because the decisions as to which instruments to use in the system depend so much on the characterization of the tasks of each of the campus decision makers and on judgments as to relevant student data, a final statement as to which particular tests and instruments, or parts thereof, ought to be used can not be made at this time. Prior to the final choice, it is necessary for various persons at the College to discuss this report and its recommendations. A small task group of potential users might be assembled for this purpose. With the input and approval of these persons, an assessment package can be devised, and a number of discrete questionnaire instruments drawn up. It will be helpful during this stage to involve both test and measurement professionals and computer programming personnel so that the data collected are both valid and reliable and, equally important, available when needed at minimum cost. It is also important that a larger group of potential users be asked to participate in some way in these decisions in order that implementation of the system at a later date be made with least resistance, if not alacrity.

I have refrained from giving attention in this report to the post-freshmen testing phases of a longititudinal testing program. Measuring the impact of college as a whole and of parts of it on students is a complicated process involving many variables and contingencies. Inasmuch as at least part of the effort to develop a profile of entering freshmen is intended to identify alternative goals for state colleges such as William Paterson College, it would be premature to lay out the dimensions of a comprehensive evaluation program. It is possible, of course, to measure changes in students over time, but without goals which are determined in advance, only post hoc validity can be attached to the connection between those changes and planned educational goals. That is, the goals must be specified ahead of time in order to test progress toward them in a scientific manner. Discussion of the freshman profile and of these recommendations will hopefully contribute toward the definition of goals at William Paterson College.

To conclude this report, I should note that in the process of preparing it I have had occasion to talk or be in written communication with a fairly large number of persons around the country who are among the most advanced thinkers in the area of assessment and evaluation. Virtually without exception, all indicated that the field is in a state of infancy. Efforts to understand the connections between cognitive and affective learning in students and between both and various aspects of a college environment have been proceeding for many years. Debates about the goals of education have also echoed through college corridors over the years. But to date there has been relatively no convincing research or practice which connects baseline data about entering students to practical decisions in the classroom or in academic management. William Paterson College is, therefore, in the forefront of

pioneering activity in this important domain of educational endeavor. It is likely that with continued efforts, it will make critical breakthroughs which will be important not only to its own students but to other colleges and universities at large.

APPENDIX A

Testing Instruments Available

INDEX

A search of the literature and of tests in use produced the instruments most relevant to the task at hand listed on the following pages. They fall into seven classes. The letter in parenthesis is the key to references earlier in this report.

Kind of Instrument	Number Referenced
Personality and Attitudes Scales (P)	12
Curricular and Pedagogical Style Preferences (C)	11
Omnibus Instruments Measuring A Large Number of Variables (O)	21
Placement, Guidance and Counseling Instruments or Testing Programs (G)	14
Diagnostic Tests of Academic and Personal Problems (D)	2
Study Habit Inventories (S)	5
WPC Instruments (W)	6
Total	71

Not included in this survey of instruments are the very numerous tests of instructor effectiveness, including, for example, the Purdue Cafeteria system. Most of these instruments are rather imprecisely connected to instructional improvement. I am continuing a search of the country for more sophisticated student feedback devices which can be used by faculty, and others for a variety of purposes. The IDEA system of the Center for Faculty Evaluation and Development in Kansas offers a beginning in this direction, but there are a number of others which seem more promising.

LIST OF INSTRUMENTS

PERSONALITY AND ATTITUDE SCALES (P)

Name of Instrument or Battery	Institution Where Developed or Published	Description
1. Omnibus Personality Inventory	Psychological Corporation	Fourteen scales measuring Thinking introversion Theoretical orientation Estheticism Complexity Autonomy Religious orientation Social extroversion Impulse expression Personal integration Anxiety level Altruism Practical outlook Masculinity-femininity Response bias
2. Personal Orientation Inventory	Educational and Industrial Testing Service	One hundred fifty items yielding scores on twelve scales: Present-Future Self-Other Self-actualization Drive Situationality Awareness of Feelings Spontaneity Self-Regard Self-Acceptance (despite weaknesses) Nature of Man Synergy Acceptance of Aggression Tendencies Intimacy Capacity

Name of Instrument or Battery	Institution Where Developed or Published	Description
3. Radicalism-Conservatism Test (Nettler & Huffman)	--	Fourteen, Likert-type items designed to measure radicalism-conservatism in economic opinion
4. Social Desirability Scale (Crowne & Marlowe)	--	Thirty-three items designed to locate individuals who describe themselves in favorable, socially desirable terms in order to achieve the approval of others
5. Personal Value Scales (Scott)	--	Sixty-item questionnaire measuring college student attitudes in the following areas: Intellectualism Kindness Social skills Loyalty Academic achievement Physical development Status (leadership) Honesty Religiousness Self-Control Creativity Independence
6. Anomia Test (Srole)	--	Five-item test of individual's generalized, pervasive sense of social malintegration

Name of Instrument or Battery	Institution Where Developed or Published	Description
7. RAPH Scale of Rigidity (Maresko et al.)	--	Tests attitudes revealing resistance to or lack of readiness to be influenced by motivationally relevant situation
8. Internal-External Locus of Control	--	Twenty-nine question scale measuring degree to which college students feel that reward for effort is outside of himself and may occur independent of his own actions
9. IPAT 8 Parallel Form Anxiety Battery	Institute for Personality and Ability Testing	Seven sub-tests analyze susceptibility to annoyance, lack of confidence in untried skills, readiness to confess to common faults, anxiety-tension symptoms
10. FIRO-B	Consulting Psychologists Press, Inc.	A test of interpersonal relations orientation. Six scores are produced: inclusion, control, affection, (each in terms of expressed and wanted)
11. Myers-Briggs Type Indicator	Educational Testing Service	Yields four scores: extraversion vs. introversion, sensation vs. intuition, thinking vs. feeling, judgment vs. perception
12. Risk-Taking (Kogan & Wallach) (Maresko et al.)	--	Twelve-item Choice Dilemma Questionnaire

CURRICULAR AND PEDAGOGICAL STYLE PREFERENCES (C)

Name of Instrument or Battery	Institution Where Developed or Published	Description
1. Student Orientations Survey	University of Delaware	Profile of student orientations toward college re nature, purpose and process of college education. Six scales deal with curricular-instructional perceptions: Achievement (goal-orientation) Assignment learning (mode of instr.) Assessment (mode of evaluation) Inquiry (style of interest exploration) Independent study Interaction (student-fac. shared planning)
2. Plough-Dressel Academic Experience Questionnaire	Michigan State/Rochester Institute of Technology	Sixty-two items, multiple scale questionnaire on student satisfaction with pedagogy, curriculum and instructor
3. Orientation Inventory	Consulting Psychologists Press	Twenty-seven statements of attitude or opinion leading to characterization of respondent in terms of self-orientation, interaction orientation or task orientation. Used in academic counseling
4. College Evaluation Questionnaire	National Opinion Research Corporation	Questionnaire dealing largely with curricular preferences and pedagogical style preferences

Name of Instrument or Battery	Institution Where Developed or Published	Description
5. Cognitive Style Battery	Oakland Community College Press, Oakland, Michigan	Developed by Dr. Joseph Hill and tested at a number of institutions under a FIPSE grant. Questions test alternative learning styles
6. Dogmatism Test (Rokeach)	--	Forty-item scale to measure individual differences in openness or closedness of belief systems
7. Status Concern Scale (Kaufman)	--	Measures attitudes toward status and mobility--i.e., the values placed on symbols of status and the attainment of higher status
8. California F Scale (Adorno)	--	Thirty-item scale measuring characteristics of an authoritarian or anti-democratic personality; also latent prejudicial attitudes toward minorities
9. Intolerance of Ambiguity Test (Budner)	--	Thirty-three item test measuring the degree to which a person tends to perceive ambiguous situations as sources of threat
10. Study of Values (AVL)	--	Assesses the relative importance of six basic interests of personality motives (45 items) Theoretical Economic Aesthetic Social Political Religious

Name of Instrument or Battery	Institution Where Developed or Published	Description
11. Field Independence/Dependence (Witkin)	Educational Testing Service (West Coast Office-Warren)	Two hundred item questionnaire determining student preferences for student-centered vs. instructor-centered instruction.

OMNIBUS INSTRUMENTS MEASURING A VARIETY OF KINDS OF VARIABLES (O)

Name of Instrument or Battery	Institution Where Developed or Published	Description
1. University Environment and Experience	UCLA Laboratory for Research on Higher Education	Eighty-five item questionnaire dealing with aspects of Field/major Student behavior Student-faculty relationships Student-administration relationships Overall impressions of campus
2. Questionnaire	National Opinion Research Center, University of Chicago	Multiple item test concerned with: Academic plans Goals Attitudes Interests
3. Student Descriptive Questionnaire	College Entrance Examination Board	Forty-nine questions about student activities, interests, plans and experiences. Also asks student to report his/her need for assistance in seven areas and a self-rating in fourteen skill/ability areas. College Board will give any college an Admissions Testing Program Report which integrates SDQ with SAT data

Name of Instrument or Battery	Institution Where Developed or Published	Description
4. College and University Environment Scales	Educational Testing Service	Seven scales to measure student expectations of, and experience with, the campus, including: Practical orientation Community Sensitivity to values and esthetics Propriety Scholarship Campus morale Quality of teaching
5. Student Questionnaire	Project on Institutional Renewal	Multi-item instrument intended to help learn about experiences, attitudes and perceptions of students. Can be adapted for administration to entering freshmen
6. Student Information Form	American Council on Education/ Cooperative Institutional Research Program	Nationally administered and normed test of incoming freshmen. Over 100 questions--demographics, goals, reasons for choice of college, intended major, attitudes toward social issues
7. College Student Survey	MRC, Inc., Iowa City, Iowa (Developed at R&D Center, UCLA)	Inquiry on the activities, opinions and experience of college students

Name of Instrument or Battery	Institution Where Developed or Published	Description
8. Experience of College Questionnaire	Strategies for Change and Knowledge Utilization, Saratoga Springs, N.Y.	Instrument asks for information about experiences and activities of students
9. Bio-Data Sub-Group Profiles	Auburn University	Twenty-four scales yielding 13 dimensions including: Academic achievement Tolerance for ambiguity Tough-mindedness Extroversion (Eysenck's E) Goals Authoritarianism Maladjustment
10. College Choice Information	National Center for Higher Education Management Systems, Boulder, Colo.	Questionnaire intended for students and parents to determine the kinds of information needed and used to decide on choice of college.
11. College Experience Questionnaire	Institute for Behavioral Research University of Georgia	Twenty-six variables, including GPA, SAT-Q, SAT-V Radicalism Tendermindedness Direct F Reverse F Social Desirability (Crowne Marlowe) Externalization (Rotter I-E) Cognitive values Social, religious conformity Economic values Physical goals (cont'd.)

Name of Instrument or Battery	Institution Where Developed or Published	Description
		Short-term goals Long-term goals Positive emotionality Negative emotionality Inhibition Exposure Integrative complexity Conceptual complexity Hierarchical simplicity Extraversion (Maudsley Inventory) Neuroticism (Maudsley Inventory) (For approach and discussion, see William Owens in Dunnette (ed.) Handbook...)
12. Happiness, Development & Goal Questionnaire	University of Rochester (author now at Vassar)	Three instruments in questionnaire Level of happiness--ten items Inventory of Psychosocial Development--60 items using Erickson theory Perceived Instrumentality of the College--14 items
13. Student Outcomes Questionnaires	National Center for Higher Education Management Systems, Boulder, Colo.	Four questionnaires, including Entering Student Questionnaire Nonreturning Student Questionnaire Graduating Student Questionnaire Recent Alumni Questionnaire

Name of Instrument or Battery	Institution Where Developed or Published	Description
14. Institutional Functioning Inventory	Educational Testing Service	Eleven scales which can be used to test the image of the campus to outsiders and to compare it with perceptions of those on campus. Scales include: freedom, diversity, concern for advancing knowledge, innovation, etc.
15. Institutional Goals Inventory	Educational Testing Service	Ninety goal statements to be answered in terms of "is" (describing the institution) or "should be" (as it ought to be). Can be used for entering students. Sub-scales include: academic development, intellectual orientation, individual personal development, humanism/altruism, etc.
16. College Student Questionnaire Part I	Educational Testing Service	Four sections of questionnaire to entering freshmen: demographics, educational experience and motivation, family background, home life style, travel experience, attitudes (including religious instructional preferences, cultural sophistication). Results in seven scales including: motivation for grades, family independence, liberalism, etc.

Name of Instrument or Battery	Institution Where Developed or Published	Description
17. Student Reactions to College Questionnaire	Educational Testing Service	One hundred fifty-seven items measure student reactions in nine categories: instruction, studying, faculty and staff contact with students, student goals and planning, registration and class scheduling, other administrative problems, student activities, financial problems, housing and transportation. Intended orimarily for enrolled community college students, canm be adapted for 4-year college
18. Higher Education Measurement and Evaluation Kit	Center for the Study of Evaluation, University of California, Los Angeles	A package of short-form tests aimed at assessing four aspects of student development, progress and attainment and four aspects of the educational process and context: Interest and involvement in social Educational objectives--progress toward Informal viewpoints on major social issues Knowledge of social trends The college environment Styles of learning Reactions to the education experience The student body

Name of Instrument or Battery	Institution Where Developed or Published	Description
19. American College Testing Service	Iowa City, Iowa	A complete program of testing for academic readiness, vocational interests, other attitudes. Nationally normed
20. Cycles Surveys	Hampshire College, Massachusetts	A set of quality of student life indicators. Fifty questions measuring aspects of intellectual, social and physical environment. Thirteen factor scores
21. Study of Images	University of Southern California (author now at University of Miami)	Questionnaire inquiring about image of campus to entering freshmen. Particularly useful to yield specific reasons for choice of specific college

PLACEMENT, GUIDANCE AND COUNSELING INSTRUMENTS OR TESTING PROGRAMS (G)

Name of Instrument or Battery	Institution Where Developed or Published	Description
1. Strong-Campbell Interest Inventory	Psychological Corporation	Single sex occupational interest inventory, classifying occupations into six types Realistic Investigative Artistic Social Enterprising Conventional
2. College Qualification Tests	Psychological Corporation	Multi-purpose battery for admissions, placement and guidance. Includes tests of verbal and numerical skills and general information (measuring breadth of background)
3. Differential Aptitude Tests	Psychological Corporation	Battery of tests of relative strengths Verbal reasoning Numerical ability Abstract reasoning Space relations Mechanical reasoning Clerical speed and accuracy Spelling Language usage Useful in deciding which courses students are most likely to profit most from. Tests are available separately

Name of Instrument or Battery	Institution Where Developed or Published	Description
4. Concept Mastery Test	Psychological Corporation	Intelligence test designed to measure ability to deal with ideas or concepts
5. Educational Skills Tests	CTB/McGraw Hill	Tests to measure English and Mathematicl skills of entering freshmen. Developed initisily to aid curriculum development in open-door colleges
6. Standford Test of Academic Skills (TASK)	Harcourt Brace Javanovich	Test battery measuring basic skills of reading, English, and mathematics
7. Undergraduate Assessment Program	College and University Programs, Educational Testing Service	Forty-eight examinations for measuring academic abilities and achievement in specific subject matter fields and in general
8. Adult Basic Learning Examination (ABLE)	Psychological Corporation	Four sub-tests include vocabulary, reading, spelling, arithmetic computation and problem-solving
9. Wide Range Vocablary Test	Psychological Corporation	One hundred item vocabulary test
10. Davis Reading Test	Psychological Corporation	Assess reading comprehension skills

Name of Instrument or Battery	Institution Where Developed or Published	Description
11. Pimsleur Modern Foreign Language Proficiency Tests	Psychological Corporation	Testing proficiency in French, Spanish, German
12. School and College Ability Tests (SCAT)	Cooperative Tests and Services, Educational Testing Service	Verbal and mathematical tests designed for advanced placement or remediation assessment. Sometimes vocational guidance.
13. Self-Assessment and Course Selection	El Centro Self-Assessment Laboratory Dallas, Texas	Nelson-Denny Reading Comprehension Grammar Usge (from D.A.T.) Institutionally designed math test Attitudes, likes and dislikes
14. Achievement/Placement Test	American Chemical Society	Tests for subject-matter competency in a number of sub-fields (e.g., biochemistry, inorganic chemistry). Note: other professional associations have developed similar instruments

DIAGNOSTIC TESTS OF ACADEMIC AND PERSONAL PROBLEMS (D)

Name of Instrument or Battery	Institution Where Developed or Published	Description
1. College Inventory of Academic Adjustment	Consulting Psychologist Press	Ninety-item test measuring aspects of maladjustment to six areas of college life: curriculum, life goal achievement, personal efficiency, study skills and practices, mental health, interpersonal relations. Used usually to find source of undergraduate underachievement (independent of scholastic aptitude), but can be adapted for predictive use for entering freshmen
2. Mooney Problem Check Lists	Psychological Corporation	Test to identify persons with problems and to increase teacher understanding of students. Prepare students for counseling interviews

STUDY HABIT INVENTORIES (S)

Name of Instrument or Battery	Institution Where Developed or Published	Description
1. Survey of Study Habits and Attitues	Psychological Corporation	Seven scores including Delay avoidance Work methods Study habits Teacher approval Education acceptance Study attitudes Study orientation
2. Cornell Learning and Study Skills Inventory	Psychologists and Educators, Inc.	
3. College Adjustment and Study Skills Inventory	Personal Growth Press, Inc.	Fifty-seven questions collapse into six scores: time distribution; attitude and personal adjustment; reading and class participation; taking notes; taking examinations; total
4. Study Attitudes and Methods Survey	Educational and Industrial Testing Services	Measure six aspects of undergraduate attitudes and study methods: Academic interests Academic drive Study methods Study anxiety Manipulation ("psyching out") Alienation toward authority
5. Media Habits Survey	Willam Paterson College	Survey students to determine habits of exposure to various media and specific programs within the media

WPC DATA COLLECTION INSTRUMENTS (W)

Name of Instrument or Battery	Institution Where Developed or Published	Description
1. Undergraduate Registration Card	William Paterson College	Collects information from entering freshmen on birth date, sex, address, expected major, race, home address
2. Admissions Application	William Paterson College	Collects information on high school activities, expected major, birth date, date of high school graduation, veteran status, transfer status
3. Self-Evaluation Health Form	William Paterson College	Physical illness record. Immunizations
4. Housing Request Form	William Paterson College	Request for dormitory space
5. High School Grade Transcripts	William Paterson College	Record of academic achievement
6. Scholastic Aptitude Tests	William Paterson College	Measure of achievement; predictor of academic success in college

APPENDIX B

OTHER RELATED ACTIVITIES AND RESOURCES

American College Testing Program: Dr. Richard Stiggins is project director under a grant from the Fund for the Improvement of Postsecondary Education. Conducting a two-year study at two colleges in Michigan. During the first year, faculty at Michigan State and McComb College were taught how to use data about students' cognitive learning styles. A questionnaire was developed and administered both to students and faculty measuring 35-40 aspects of the teaching-learning process: learning style dimensions, ability measures, social orientations, and interpersonal skills. The instrument used the cognitive style theory of Dr. Joseph Hill of Oakland Community College. Stiggins reports that they are still at work on correlating pre-test data with outcomes of experimental and control groups.

St. Petersburg Community College: Dr. Rosemary Ammons has been teaching nursing faculty how to use the Witkin theory of field dependence/independence and the Myers-Briggs. She clusters students into A & B modules depending on test scores, then develops appropriate curriculum. Found the Hill instrument had too many variables; is developing own instrument with both cognitive and affective variables. One observed output to date: clustering nurses according to cognitive styles in clinical programs proves less effective. Clinical-type courses apparently should be structured to accommodate a diversity of student types. Implications are perhaps that for large lecture classes, clustering of students would be beneficial, while for small group discussions, it would not.

Pima Community College: Dr. Barbara Garrett. Pima is an open-door college. Students sign up for any courses they desire, then are referred to Counseling Center (Student Developmental Services Center) where they are given a battery of tests including Wechler, Wide-Range Achievement, GATT-B, Strong. Pima uses the Guidance Information System for career planning. This is an on-line computer arrangement with an organization called TIME-SHARE (West Hartford, Connecticut). Students are invited but not required to report their scores on various tests administered by the American College Testing Service. ACT offers regional training programs to faculty and others in how to use student data. For example, a two-day workshop uses "Mid-State," a computer simulation model.

Queensborough Community College: Dr. Lynn Tryoka, consultant for the College Entrance Examination Board, is chairing a committee on revision of the College Level Examination Program. Current intereests lie in relating examination scores for placement with other measures, such as SAT.

Howard Community College: Dean Robert Levene with Al Mizell uses the Myers-Briggs as a diagnostic to create four groups. Also administered to faculty, a faculty-student "match" is then created.

University of Wisconsin, Green Bay: Dr. Eugene L. Hartley is Dean of Deveopment. A new departmental structure has been worked out oriented toward human ecology. Freshmen are tested using the Joseph Hill's instrument (Oakland Community College). Data are used at various parts of the campus for decision making.

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Pennsylvania State College: Dr. James Wink has worked with various departments to develop criterion tests for placement. Tests are not nationally normed, but they are good predictive instruments. Penn State has been testing entering students since 1956, but does not administer the ACE Student Information Form.

Eastfield College: Dr. Joseph Tinin, Director of Counseling, has designed a computer-based instant data retrieval system designed to summarize and profile student self-assessment data. "Encounter With Eastfield" "summarizes student demographic information, educational background, self-assessment of educational skills and career goals. The data can be easily transferred to faculty for locating students indicating an interest in their career field and to provide profiles for selected groups of students (e.g., specific career majors, individual classes, age groupings, etc.)"

Oakland Community College: C. Bruce Martin, Director of Academic and Management Information Systems handles the administration of a Cognitive Style Test Battery which was designed by Dr. Joseph Hill, now president of the College. The data from the battery are integrated in an extensive data processing system. Tests are completed using Opscan scoring sheets. Data users have access to on-line systems for immediate information about students or groups of students.

El Centro College: W.R. Fowler. El Centro has come up with a "Self-Assessment and Course Selection" laboratory which is administered to all incoming freshmen by the counseling staff. It consists of a number of standard tests plus a special, locally designed test folder which is filled out by the student and then reviewed by the counselor. Flow charts help both student and counselor chart the appropriate curriculum.

Texas Education Agency: Dr. Jim F. Reed. "...the Texas Education Agency contracted with Tarrant County Junior College for the development of a post-secondary student follow-up management information system." "The Student Information System, built around the concept of an educational management information system, is divided into seven sub-systems, each with its own instruments and methods of processing." Uses fourteen questionnaires designed to use data from graduates and dropouts for curricular and instructional improvement.

University of Nebraska-Lincoln: Dr. Gene Trani under a FIPSE grant has developed a three-credit course on learning analysis. It consists of three weeks offered by educational psychologists dealing with cognitive skills followed by four three-week modules of style demonstrations. Student then answers a questionnaire which helps him or her determine which instructional style is most effective.

Appendix C

New Jersey Colleges Participating in the Cooperative Institutional Research Program of the American Council on Education and UCLA

Atlantic Community College
Bergen Community College
Bloomfield College
Centenary College for Women
Fairleigh Dickinson University
Glassboro State College
Middlesex County College
Montclair State College
Newark College of Engineering
Princeton University
Ramapo College
Rensselair Polytechnic Institute
Rider College
Rutgers - Camden (beginning 1977)
- Newark (beginning 1977)
Seton Hall University
Trenton State College
Upsala College

For reference, the following New Jersey colleges participate the testing service of the American College Testing Program:

Burlington County College
Camden County College
Gloucester County College
Middlesex County College
Ocean County College

Appendix D

Selected List of Books on the Subject of Student Growth and Development and Curricular Change

Snyder, Benson	The Hidden Curriculum
Bell, Daniel	The Reforming of General Education
Chickering, Arthur	Education and Identity
Chickering, Arthur	Commuting Versus Resident Students
Katz, Joseph	No Time For Youth
Mann, Richard	The College Classroom
Axelrod, Joseph	The University Teacher As Artist
Becker, Howard	Making the Grade
Heath, Douglas	Growing Up in College
Sanford, Nevitt	Where Colleges Fail
Hazen Foundation	The Student in Higher Education
Brawer, Florence	New Perspectives on Personality Development in College Students
Trent, James & Leland Medsker	Beyond High School
Lenning, Oscar	"Improving Educational Outcomes", New Directions for Higher Education, Winter, 1976
Ericksen, Stanford	Motivation for Learning
K. Patricia Cross	Accent on Learning
Bolton, Charles & Kenneth Kammoyer	The University Student
Gaff, Jerry et.al.	College Professors and Their Impact on Students
Feldman, Kenneth & Theodore Newcomb	The Impact of College on Students
Freedman, Mervin	The College Experience
Muscutine, Charles	Education At Berkeley